

REMARKS

Applicant, by the amendments presented above, has made a concerted effort to present claims which clearly define over the prior art of record, and thus to place this case in condition for allowance.

In the Office Action, the Examiner rejected claims 1-18 under 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention and further rejected these claims under 35 U.S.C. §102(e) as being anticipated by United States Patent No. 7,237,154 (Zorian). Each of the independent claims have been amended to overcome the indefiniteness rejection and further distinguish the present invention from that which is disclosed in Zorian.

Specifically, independent claim 1 has been amended such that it now specifically claims **loading a value into an on-chip counter through a test pattern during production testing, where the value represents an amount of redundant elements which are allowed for a repair**; testing the memories a first time; generating a repair solution; using the repair solution to repair a first set of damaged memories while not repairing and instead flagging a second set of damaged memories, **wherein each of the memories in the second set have been determined to require a number of redundant elements to be used for the repair, where the number exceeds the value which has been loaded into the on-chip counter**; making an on-chip assessment to test the memories a second time; and using the repair solution to repair damaged memories which were not previously flagged. Independent claim 12 has been similarly amended, but is directed to an apparatus. Applicant respectfully submits that this is neither disclosed nor suggested by Zorian.

The present invention provides that redundant memory elements are, in effect, conserved during the first repair for possible future use during subsequent testing in the field. As claimed, a value is loaded into an on-chip counter through a test pattern during production testing, where the value represents an amount of redundant elements which are allowed for a repair, and then the memories are tested and a repair solution is generated. The repair solution is used to repair a first set of damaged memories while not repairing and instead flagging a second set of damaged memories. The value in the on-chip counter is used to determine when, even though a memory is repairable, it would require too many redundant memory elements to do so. As such, the memory is flagged. Each of the memories in the second set have been determined (using the on-chip counter) to require a number of redundant elements to be used for the repair, where the number exceeds the value which has been loaded into the on-chip counter. In other words, if a memory would require too many redundant elements to repair, the memory is not repaired and instead the redundant elements are conserved for possible future use during a subsequent repair. Finally, an on-chip assessment is made in order to test the memories a second time; and the repair solution is used to repair damaged memories which were not previously flagged. Applicant respectfully submits that this is neither disclosed nor suggested in Zorian.

The present invention, as claimed, provides that the value which is loaded into the on-chip counter is variable or settable. This provides several advantages which are discussed in the present application at, for example, page 7, lines 12-17 and page 8, lines 6-7 (“the use of redundant resources can be controlled to any value for the same product over the lifetime”) and page 8, lines 21-24. Additional support for the amendment contained herein can be found at

several locations throughout the specification, such as at page 6, lines 14-21; page 7, lines 3-17; page 8, lines 1-14; and throughout page 9 ("counter 1 (34)").

In view of the above amendments and remarks, Applicant respectfully submits that the claims of the application are allowable over the rejections of the Examiner. Should the present claims not be deemed adequate to effectively define the patentable subject matter, the Examiner is respectfully urged to call the undersigned attorney of record to discuss the claims in an effort to reach an agreement toward allowance of the present application.

Respectfully submitted,

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